

CLADOCERA OF DHARWAD (KARNATAKA STATE)¹

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(With seven plates)

A total of 22 species of freshwater Cladocera from Dharwad area, Karnataka State have been identified and described. Of these, 17 species are hitherto not recorded from South India and a species, *Guernella raphaelis* Richard is new to the Indian subcontinent. The distribution of individual species in the water bodies and their total percentage occurrence have also been studied.

INTRODUCTION

This paper reports the results of an extensive survey of cladocerans from Dharwad (Karnataka State) in which 22 species belonging to 17 genera and six families have been recorded. Of these, 17 species are new to South India and 1 species is new to the Indian subcontinent. (Table 1).

MATERIAL AND METHODS

The collections of zooplankton were made fortnightly for one year (January to December, 1979) by using plankton hand net made of nylon bolting cloth (mesh size 50 μ m). Cladocera adhering to weeds were collected by rinsing the weeds vigorously in a bucket and sieving through bolting nylon. The material was fixed and preserved in 4% formalin, individual species were sorted, their whole mounts stained with borax carmine and mounted in glycerine jelly. Parts of taxonomic importance were dissected and processed in a similar manner. Camera lucida drawings were made from the mounts of the entire body or their parts. Identification up to species was based on the key/description given by Brooks (1959).

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Biswas (1971), Nayar (1971), Fernando (1974) and Smirnov (1974, 1976).

STUDY AREA

Dharwad has a hilly terrain 784 m above MSL. The maximum atmospheric temperature is 36°C in April-May and the minimum is 14°C during December-January. The average rainfall is 53 mm and the relative humidity ranges from 43 to 80%.

The 26 water bodies surveyed included one reservoir, 19 irrigation tanks, three ponds and three temporary pools. The reservoir has been recently constructed and is used for irrigation. Its water is clear and has marginal aquatic vegetation. Of the 19 tanks, three were without aquatic vegetation and their water was clear. Seven other tanks abound in rooted and floating vegetation. The remaining nine tanks show muddy brown water. The pond water was muddy and showed scanty phytoplankton. The temporary pools were highly turbid.

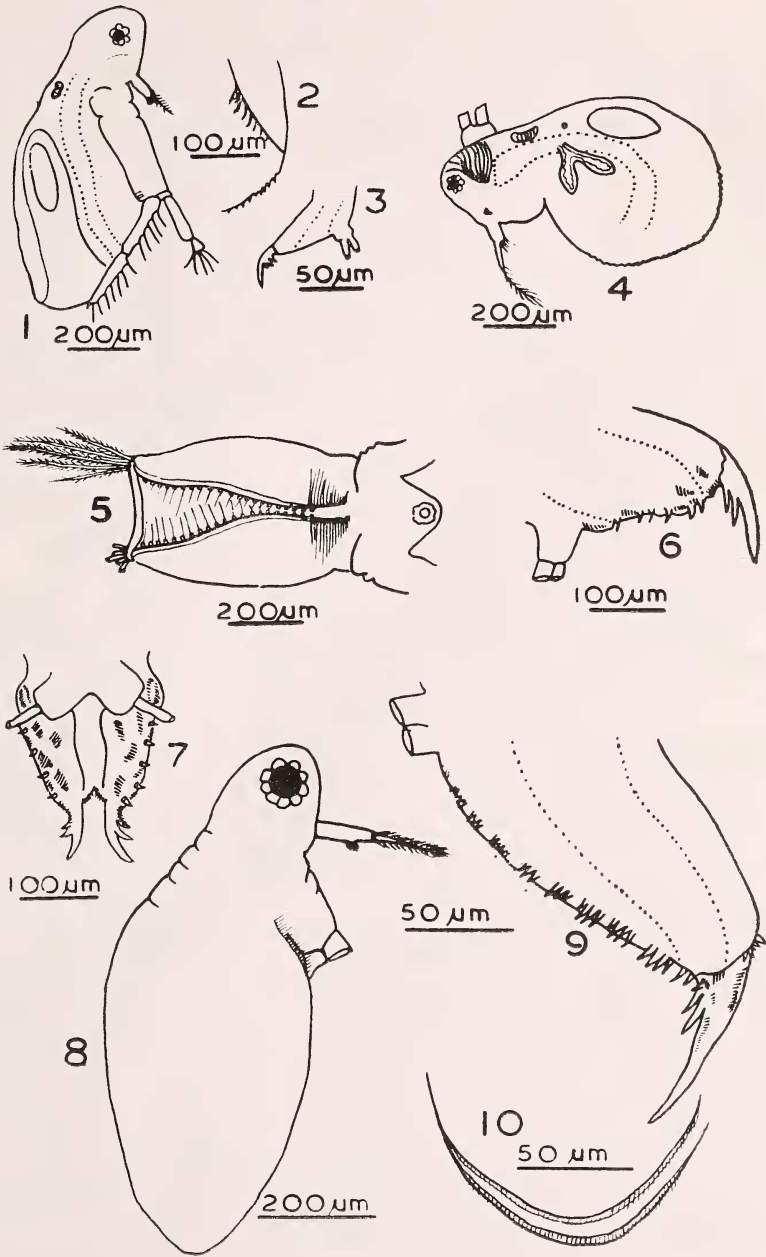
TAXONOMIC ACCOUNT

Family: SIDIDAE

Diaphanosoma excisum Sars, 1885 (Pl. I, Figs. 1-3)

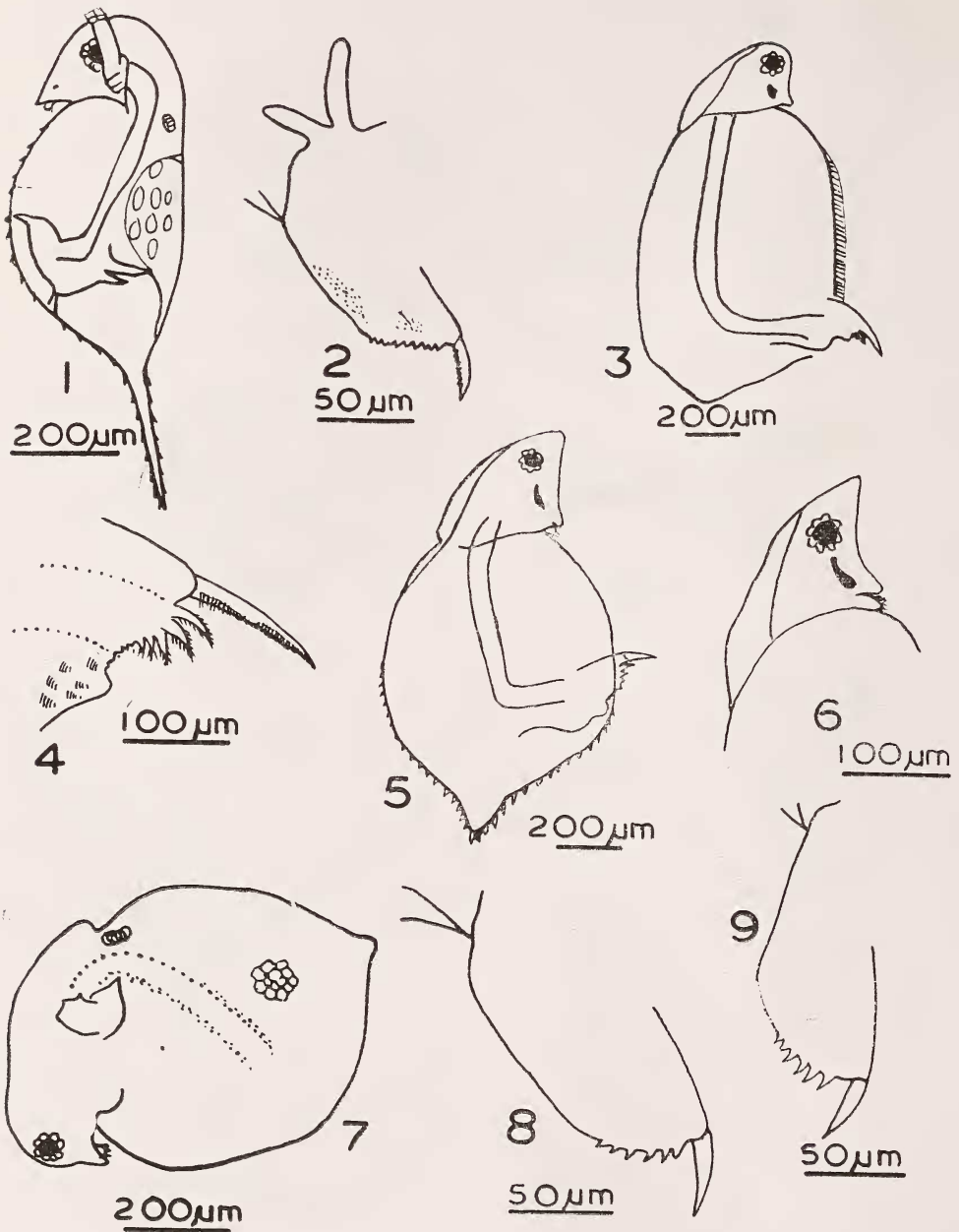
Distinguished by its large head with relatively small eyes, body brown to yellow. Num-

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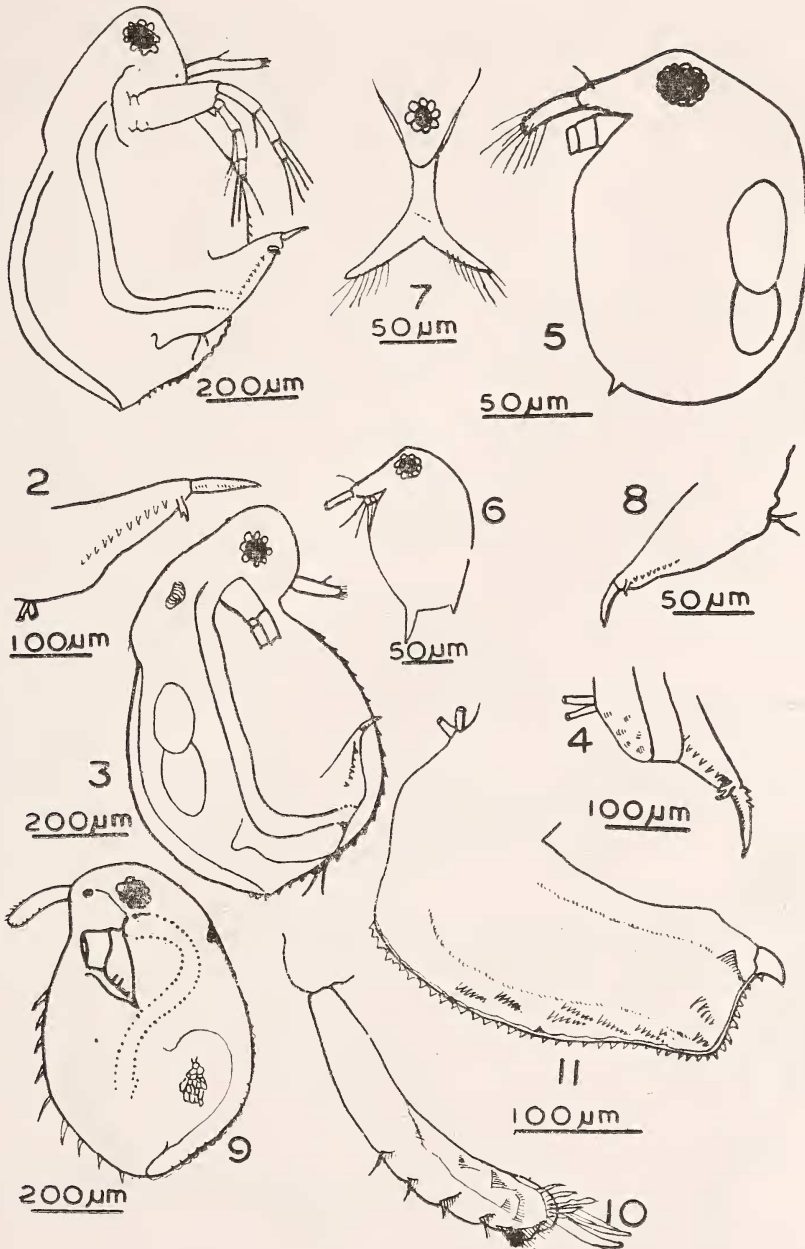
1. *Diaphanosoma excisum* Sara, lateral view; 2. Postero-ventral part of the shell; 3. Postabdomen; 4. *Latonopsis australis* Sars; 5. *L. australis*, ventral view; 6. Postabdomen, lateral view; 7. Postabdomen, dorsal view; 8. *Pseudosida bidentata* Herrick; 9. Postabdomen; 10. Posterior part of the shell.

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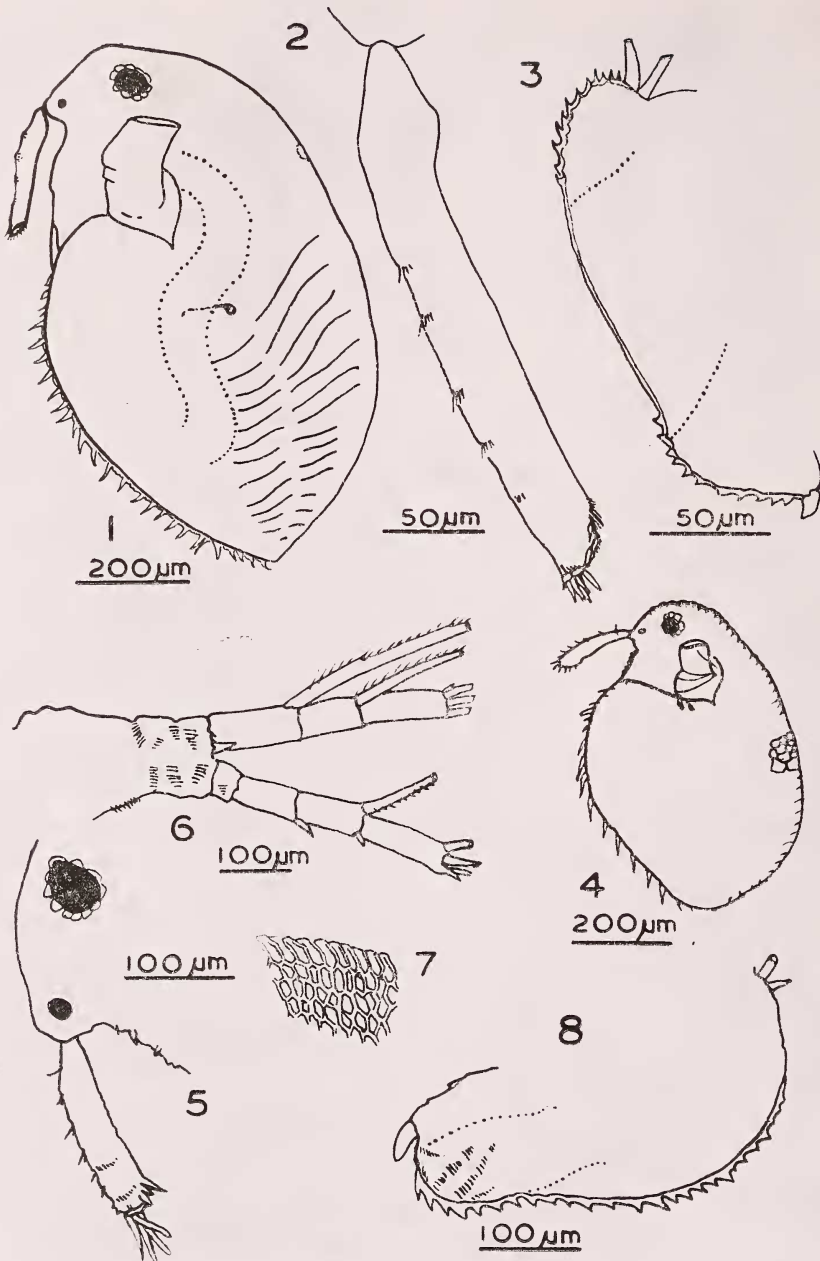
1. *Daphnia carinata* King; 2. Postabdomen; 3. *Simocephalus exspinosus* Koch; 4. Postabdomen, enlarged; 5. *S. elisabathe* King; 6. Head region enlarged; 7. *Ceriodaphnia cornuta* Sars; 8. Postabdomen; 9. *C. laticaudata* Muller, Postabdomen.

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1. *Moina micrura dubia* Kurz; 2. Postabdomen; 3. *Moinodaphnia macleayi* King; 4. Postabdomen; 5 & 6. *Bosminopsis dietersi* Richard; 7. Antennules, ventral; 8. Postabdomen; 9. *Macrothrix laticornis* Fischer; 10. Antennule; 11. Postabdomen.

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1. *Echinisca odiosa* Gurney; 2. Antennule; 3. Postabdomen; 4. *Machothrix geoldi* Richard; 5. Head region enlarged; 6. Antenna; 7. Part of the shell, dorsal; 8. Postabdomen.

CLADOCERA OF DHARWAD

TABLE 1

CLADOCERAN SPECIES COMPOSITION AND PERCENT DISTRIBUTION IN FRESHWATER BODIES OF DHARWAD

Cladoceran species	Reservoir (1)	Tanks with clear water (3)	Tanks with aquatic vegetation (7)	Tanks with brown & muddy water (9)	Ponds (3)	Temporary Pools (3)	Total No. of water bodies showing species	% distribution of species
1. <i>D. excisum</i>	1	1	5	7	2	1	17	77.3
2. * <i>L. australis</i>	—	—	2	—	—	—	2	9.0
3. * <i>P. bidentata</i>	—	—	2	—	—	—	2	9.0
4. <i>D. carinata</i>	—	—	—	1	2	2	5	22.7
5. <i>C. cornuta</i>	—	1	3	5	2	1	12	54.5
6. * <i>C. laticaudata</i>	1	—	1	—	2	—	4	18.0
7. * <i>S. exspinosus</i>	—	—	2	—	—	—	2	9.0
8. * <i>S. elisabathe</i>	—	—	2	—	—	—	2	9.0
9. * <i>M. micrura dubia</i>	—	—	1	—	1	—	2	9.0
10. * <i>M. macleayi</i>	—	—	1	—	—	—	1	4.5
11. * <i>B. dietersi</i>	1	—	—	—	—	—	1	4.5
12. <i>M. laticornis</i>	—	—	3	—	—	—	3	13.6
13. * <i>M. geoldi</i>	—	—	2	—	—	—	2	9.0
14. * <i>E. triserialis</i>	—	—	3	—	—	—	3	13.6
15. * <i>E. odiosa</i>	—	—	2	—	—	—	2	9.0
16. ** <i>G. raphaelis</i>	—	—	1	—	—	—	1	4.5
17. * <i>I. spinifer</i>	—	—	2	—	—	—	2	9.0
18. * <i>B. karua</i>	—	—	2	—	—	—	2	9.0
19. * <i>P. trigonellus</i>	—	—	2	—	—	—	2	9.0
20. * <i>C. reticulatus</i>	1	1	3	1	1	—	7	29.7
21. * <i>C. faviformis</i>	—	—	1	—	—	—	1	4.5
22. * <i>D. serrata</i>	—	—	3	—	—	—	3	13.6

* New records to South Indian region.

** New record to Indian subcontinent.

ber of teeth on the postero-ventral shell margin highly variable; sometimes the teeth look like incisions.

Recorded earlier from India by Biswas (1971). Nayar (1971) from Rajasthan, by Michael (1973) from Tamil Nadu and Sharma (1978) from Bengal.

Distribution: Common in tropics and sub-tropics.

***Latonopsis australis* Sars (Pl. I, Figs. 4-7)**

Body large and slightly elliptical with a thin shell. Head small with relatively large

eyes. Terminal part of the antennule with a long flagellum and a set of setae. Ventral and posterior margins of the shell valves serrated, with long, unequal setae beset with fine bristles. Three long setae on the posterior margin of the valve. Postabdomen broad, anal spines vary from 5-7.

Reported earlier by Biswas (1971) from Rajasthan.

Distribution: Australia, Sri Lanka, India.

***Pseudosida bidentata* Herrick, 1884 (Pl. I, Figs. 8-10)**

Body similar to that of *Sida* but head more